2.0 Edgemont, South Dakota, Disposal Site

2.1 Compliance Summary

The Edgemont, South Dakota, Uranium Mill Tailings Radiation Control Act (UMTRCA) Title II Disposal Site was inspected on June 12, 2007, and was in excellent condition. The entrance signpost was broken, and the sign was relocated to the entrance gate. The site continues to be grazed by a local rancher in exchange for checking site security and repairing the perimeter fence. Noxious weeds persist on and adjacent to rock-covered surfaces and will require continued monitoring and control. Groundwater monitoring is not required at this site. No cause for a follow-up inspection was identified.

2.2 Compliance Requirements

Requirements for the long-term surveillance and maintenance of the Edgemont, South Dakota, Disposal Site are specified in the *Long-Term Surveillance Plan* [LTSP] *for the DOE Tennessee Valley Authority (UMTRCA Title II) Disposal Site, Edgemont, South Dakota,* (U.S. Department of Energy [DOE], Grand Junction, Colorado, June 1996) and procedures established by DOE to comply with the requirements of Title 10 *Code of Federal Regulations* Part 40.28 (10 CFR 40.28). License requirements for this site are listed in Table 2–1.

Table 2–1. License Requirements for the Edgemont, South Dakota, Disposal Site

Requirement	Long Term Surveillance Plan	This Report
Annual Inspection and Report	Sections 3.3 and 3.4	Section 2.3.1
Follow-up Inspections	Section 3.5	Section 2.3.2
Routine Maintenance and Emergency Measures	Section 3.6	Section 2.3.3
Environmental Monitoring	Section 3.7	Section 2.3.4

Institutional Controls—The 360-acre disposal site is owned by the United States of America and was accepted under the U.S. Nuclear Regulatory Commission general license (10 CFR 40.28) in 1996. DOE is the licensee and, in accordance with the requirements for UMTRCA Title II sites, is responsible for the custody and long-term care of the site. Institutional controls at the disposal site, as defined by DOE Policy 454.1, consist of federal ownership of the property, a site perimeter fence, a warning/no trespassing sign placed at the site entrance, and a locked gate at the site entrance. Verification of these institutional controls is part of the annual inspection.

2.3 Compliance Review

2.3.1 Annual Inspection and Report

The site, located approximately 2 miles south of the town of Edgemont in Fall River County near the southwestern corner of South Dakota, was inspected on June 12, 2007. Results of the inspection are described below. Features and photograph locations (PLs) mentioned in this report are shown on Figure 2−1. Numbers in the left margin of this report refer to items summarized in the Executive Summary table.

2.3.1.1 Specific Site Surveillance Features

Site Access, Gates, Sign, and Fence—Access to the Edgemont Disposal Site is immediately off County Road 6N and is unimpaired. No private property is crossed to gain access.

A tubular metal entrance gate is secured by a locked chain and was in excellent condition. Two wire gates are also present along the perimeter fence: one at the northwest corner of the property on the north perimeter fence line and one approximately 700 ft north of the southeast corner of the property on the east perimeter fence line. Both were in good condition.

The entrance sign was the only warning/no trespassing sign installed at the site. At the time of the inspection, the signpost was broken and laying on the ground; the damage likely was caused by cattle. The sign was relocated to the entrance gate (PL–1), and will be moved to a new post inside the gate in 2008. 2A

A four-strand barbed wire fence was installed in spring 1999 along the site perimeter boundary to demarcate DOE property and to control grazing on the property. The fence truncates the southeast corner to allow livestock access to a pre-existing stock pond. A grazing license granted by DOE allows a local rancher to graze the site in return for checking site security and maintaining the perimeter fence. Controlled grazing promotes turf vitality, and cattle were on the site at the time of the inspection. An all terrain vehicle was used to inspect the entire site perimeter, and the fence was in excellent condition (PL–2).

Site Marker and Monuments—One unpolished granite site marker identifying the disposal site is located just inside the entrance gate and was in excellent condition. Four boundary monuments, located at each corner of the property, were in excellent condition (PL–3).

Monitor Wells—There are no monitor wells at this site.

2.3.1.2 Transects

To ensure a thorough and efficient inspection, the site was divided into four areas referred to as transects: (1) the grass-covered disposal cell top; (2) the riprap-covered embankment face and associated drainage and diversion channels; (3) the region between the disposal cell and the site perimeter; and (4) the outlying area.

Within each transect, inspectors examined specific site surveillance features, such as boundary monuments. Each transect was inspected for evidence of erosion, settling, slumping, or other disturbance that might affect site integrity or the long-term performance of the cell.

Top of the Disposal Cell—The 100-acre top of the disposal cell, completed in 1989, is grass-covered and was in excellent condition (PL–4). DOE manages the grass cover through controlled grazing. The grass is well established and was not overgrazed when inspected. Numerous cattle trails are present on the cell top, but there were no indications of erosion, settlement, or other modifying processes that might affect the integrity of the cell.

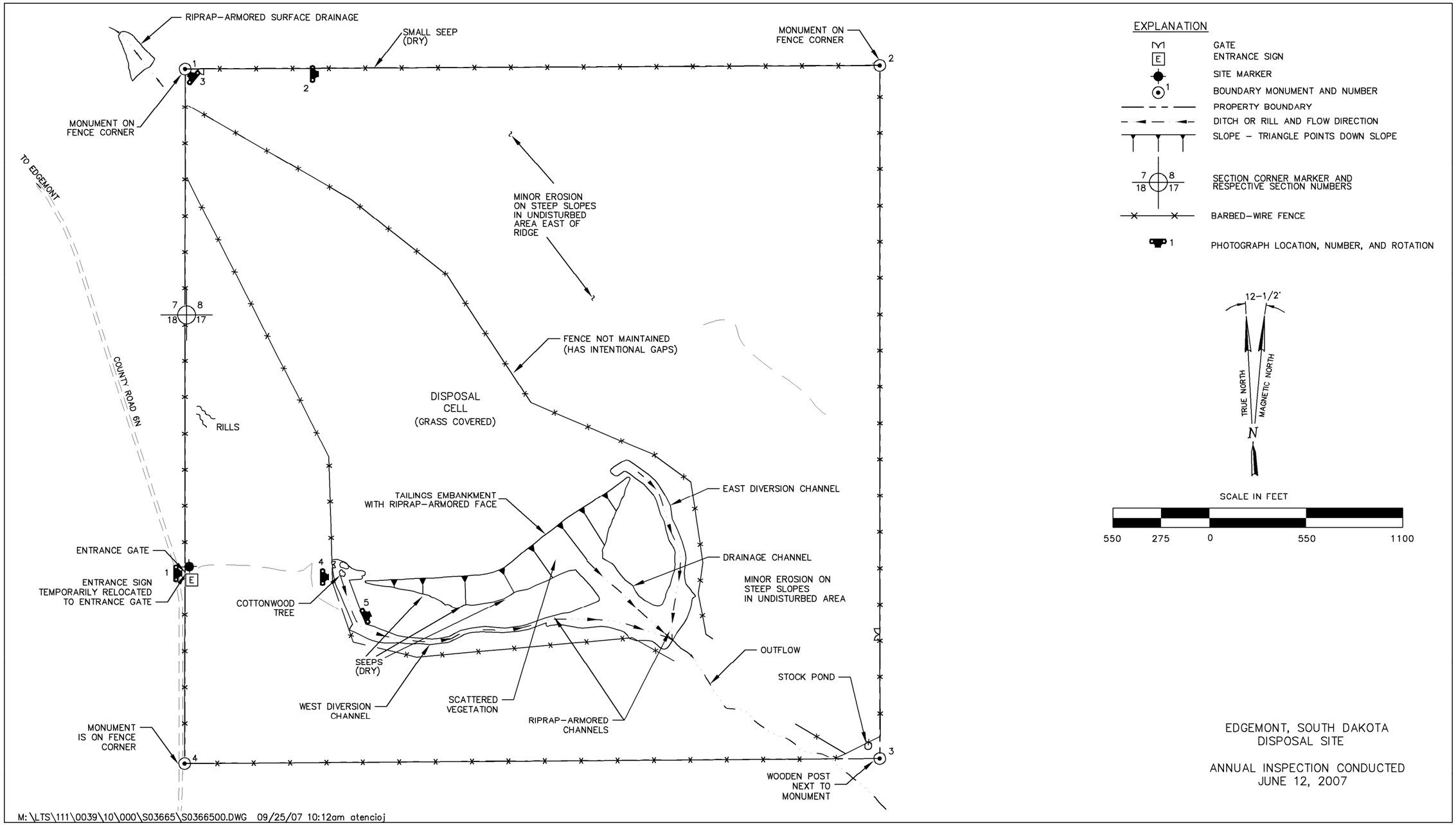

Figure 2–1. 2007 Annual Compliance Drawing for the Edgemont, South Dakota, Disposal Site

Embankment Face and Drainage and Diversion Channels—The embankment face, the steepest man-made slope on site, is covered with riprap. The slope is stable, and the riprap showed no signs of degradation. Scattered plants, mostly grass and annual weeds, grow in the riprap (PL−5). These plants do not pose a threat to the stability or function of the embankment face.

Diversion and drainage channels are grass-covered on their upgradient portions (these are gentle swales on each side of the disposal cell) and riprap-armored on their downgradient portions and on steeper slopes. Grass in the vegetated portions of the channels is dense and healthy, and there was no evidence of erosion. Minor amounts of vegetation occur in the riprap (PL–4). The vegetation density does not appear to have increased significantly in the last few years and does not pose a threat to the function of the channels. The riprap-armored surface drainage channel just outside the northwest corner of the property, designed to prevent headward erosion onto the disposal site, was also stable and in good condition (PL–3).

DOE has retained the Fall River County weed control agent to spray Canada thistle, a noxious weed persisting on the site, since 1998. The thistle usually has been found growing on and along the edges of the riprap-armored surfaces. Numerous patches were present at the time of the
2B inspection. These patches subsequently were sprayed with herbicide by the county.

Region Between the Disposal Cell and the Site Perimeter—The area between the disposal cell and the site perimeter consists of undisturbed areas covered with native grasses and shrubs and formerly disturbed areas covered primarily with grasses. Although some areas of minor natural erosion are occurring on the steep shale slopes in the undisturbed areas, the erosion does not threaten the integrity of the stabilized tailings. Overall, this region of the site is in excellent condition.

Outlying Area—The site is surrounded by private land used primarily for grazing and wildlife habitat. The area approximately 0.25 mile beyond the site boundary was inspected from within the boundary fence. The town of Edgemont operates a municipal landfill north-northwest of the site, and minor amounts of windblown trash have been observed on site or along the fences; however, landfill trash was insignificant at the site this year. There was no evidence of activity or change in land use that could affect the site.

2.3.2 Follow-Up Inspections

DOE will conduct follow-up inspections if (1) a condition is identified during the annual inspection or other site visit that requires a return to the site to evaluate the condition, or (2) DOE is notified by a citizen or outside agency that conditions at the site are substantially changed. No follow-up inspections were required in 2007.

2.3.3 Routine Maintenance and Emergency Measures

Noxious weeds were sprayed with herbicide in 2007. No other maintenance or repairs were required.

Emergency measures are corrective actions that DOE will take in response to unusual damage or disruption that threaten or compromise site health and safety, security, integrity, or compliance with 40 CFR 192. No emergency measures were required in 2007.

2.3.4 Environmental Monitoring

Groundwater monitoring is not required at this site, as stipulated in the LTSP, due to the presence of a 300- to 700-foot-thick layer of competent unweathered shale bedrock lying between the disposed tailings and the uppermost confined aquifer. Additionally, clay liners were constructed to isolate the tailings from the shallower unconfined perched groundwater present as a result of local precipitation. There is no evidence of any direct hydraulic connection between the perched groundwater and the underlying confined bedrock aquifer.

2.3.5 Photographs

Table 2–2. Photographs Taken at the Edgemont, South Dakota, Disposal Site

Photograph Location Number	Azimuth	Description
PL–1	90	Entrance sign relocated to the entrance gate.
PL–2	90	Perimeter fence along the north property boundary.
PL–3	310	Boundary monument BM–1; riprap-armored surface drainage northwest of the site in background.
PL–4	90	The west diversion channel and the grass-covered disposal cell.
PL–5	65	The face of the tailings embankment and cattle on the disposal cell top.

EDG 6/2007. PL–1. Entrance sign relocated to the entrance gate.

EDG 6/2007. PL–2. Perimeter fence along the north property boundary.

EDG 6/2007. PL–3. Boundary monument BM–1; riprap-armored surface drainage northwest of the site in background.

EDG 6/2007. PL–4. The west diversion channel and the grass-covered disposal cell.

EDG 6/2007. PL–5. The face of the tailings embankment and cattle on the disposal cell top.

End of current text